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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,974	05/23/2006	Koichiro Aoyagi	20241/0204490-US0	1077

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EXAMINER

FINK, BRIEANN R

ART UNIT	PAPER NUMBER
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4131

MAIL DATE	DELIVERY MODE
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11/21/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/595,974	Applicant(s) AOYAGI ET AL.	
	Examiner BRIANN R. FINK	Art Unit 4131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/23/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 5/26/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/23/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 4-16, and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by *Wang* (US 6,639,032).

Wang discloses a process for making hyperbranched polymers from monomers such as (1-chloromethyl trichloroacetyl)ethyl acrylate) and (1-chloromethyl trichloroacetyl)ethyl ether (col. 14, Sample 4 and 6). They are further polymerized in Examples 11-13 (col. 21-22), all which fall within the structural limitations of the instant claims 1 and 4-6. For example, the limitations are met in claim 1 as the following: R₁, R₂ and R₃ are H, X is an ethyl 'acetate' group, and Y is a methyl chloride and a tribromoacetyl group. These same limitations also meet claims 4-6.

As to claims 13-16 and 18-20, *Wang* further discloses that the molecular distribution of the polymers is from 1.001 to 100 with a molecular weight from 100 to 10⁶ (col. 11, ll. 9-11). *Wang* also mentions that the polymers can be polymerized into a star polymer (col. 12, ll. 31-41). The polymers can also be polymerized with functional end groups can also be prepared (col. 12, ll. 44-46).

Claims 7-12 define the product by how the product was made. Thus, claims 7-12 are product-by-process claims. For purposes of examination, product-by-process claims are not limited to the manipulation of the recited steps, only the structure implied by the steps. See MPEP 2113. In the present case, the recited steps imply a structure having a highly branched molecular structure. The reference suggests such a product.

2. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by *Ohsawa et al* (US 6,551,758).

Ohsawa et al. discloses a resin used in a resist composition. The resin polymer is a hyperbranched polymer derived from formula (2") (col. 14). The limitations of claims 1-3 are satisfied when formula (2") is defined by the following: R_4 is H or methyl, x is 0, ZZ is CH_2 and y is 2.

3. Claim 1-3, 7-9, 14-15, 17, 18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by *Matyjaszewski et al.* (US 5,763,548).

Matyjaszewski et al. discloses a living polymerization process (col. 5, ll. 30-40) used to produce star and hyperbranched polymers (col. 6, ll. 29-33).

Matyjaszewski et al. further discloses that any radically polymerizable alkene can be used as a monomer, and include a various different numbers of structures (col. 6, l. 37 – col. 8, l. 44). One structure in particular can be an alkene with a phenyl ring, in which each hydrogen atom may be substituted 1-5 times with an alkyl of 1 to 20 carbon atoms, in which each of the hydrogen atoms is independently replaced by a halide (col. 6, l. 57 and col. 7, l. 18-28). This

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particular structure meets all of the structural limitations of claims 1-3, 7-9, 14-15, 18 and 20. A variety of different metal catalysts can be used to carry out the polymerization (col. 9, ll. 47-67). *Matyjaszewski et al.* further discloses that the polymers may have an average molecular weight up to 1,000,000 (col. 14, ll. 23-24).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRIEANN R. FINK whose telephone number is (571)270-7344. The examiner can normally be reached on Monday through Friday, 7:00 AM to 4:30 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Sample can be reached on (571)272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R. Sample/
Supervisory Patent Examiner
Art Unit 4131

/B. R. F./
Examiner, Art Unit 4131